



BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

Folding Shutter Corporation
7089 Hemstreet Place
West Palm Beach, Florida 33413

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: "Impact" Aluminum Bahama Shutter

APPROVAL DOCUMENT: Drawing No. 1018, titled "Impact Bahama Shutter (Dade)", sheets 1 through 10 of 10, prepared by W. W. Schaefer Engineering & Consulting, P.A., dated 12/08/2000, last revision #A1 dated 10/10/2005, signed & sealed by Warren W. Schaefer, P.E., bearing Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises & renews** NOA # 01-0216.03 and consists of this page 1, evidence submitted page E-1 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
12/28/2006

NOA No 06-0831.02
Expiration Date: 11/15/2011
Approval Date: 12/28/2006
Page 1

Folding Shutter Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 01-0216.03

A. DRAWINGS

1. Drawing No. 1018, titled " Impact Bahama Shutter ", prepared by W. W. Schaefer Engineering & Consulting, P.A., dated December 08, 2000, sheets 1 through 10 of 10, signed and sealed by Warren W. Schaefer, P.E. on October 22, 2001.

B. TESTS

1. Test Report on: 1) Large Missile Impact Test, per PA-201, 2) Cyclic Wind Pressure Test, per PA-203 and 3) Uniform Static Air Pressure test per PA-202, of Bahama shutters, prepared by Hurricane Test Laboratory Inc., Report Nos. **0143-0912-00, 0143-0713-00, and 0143-0108-01** dated February 13, 2001, signed and sealed by Vinu J. Abraham, P.E.

C. CALCULATIONS

1. Anchor analysis and calculations dated 02/08/2001, Pages 1 to 51, prepared by W. W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E. on 02/08/2001.

D. MATERIAL CERTIFICATION

1. Certified Tensile Test Report No. IBM-186, prepared by QC Metallurgical Inc., dated 05/24/2001, signed and sealed by Frank Grate, P.E.

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. 1018, titled " Impact Bahama Shutter (Dade) ", sheets 1 through 10 of 10, prepared by W. W. Schaefer Engineering & Consulting, P.A., dated 12/08/2000, last revision #A1 dated 10/10/2005, signed & sealed by Warren W. Schaefer, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. Anchor analysis and calculations dated 10/10/2005, 17 Pages, prepared by W. W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E. on 10/10/2005.

D. QUALITY ASSURANCE

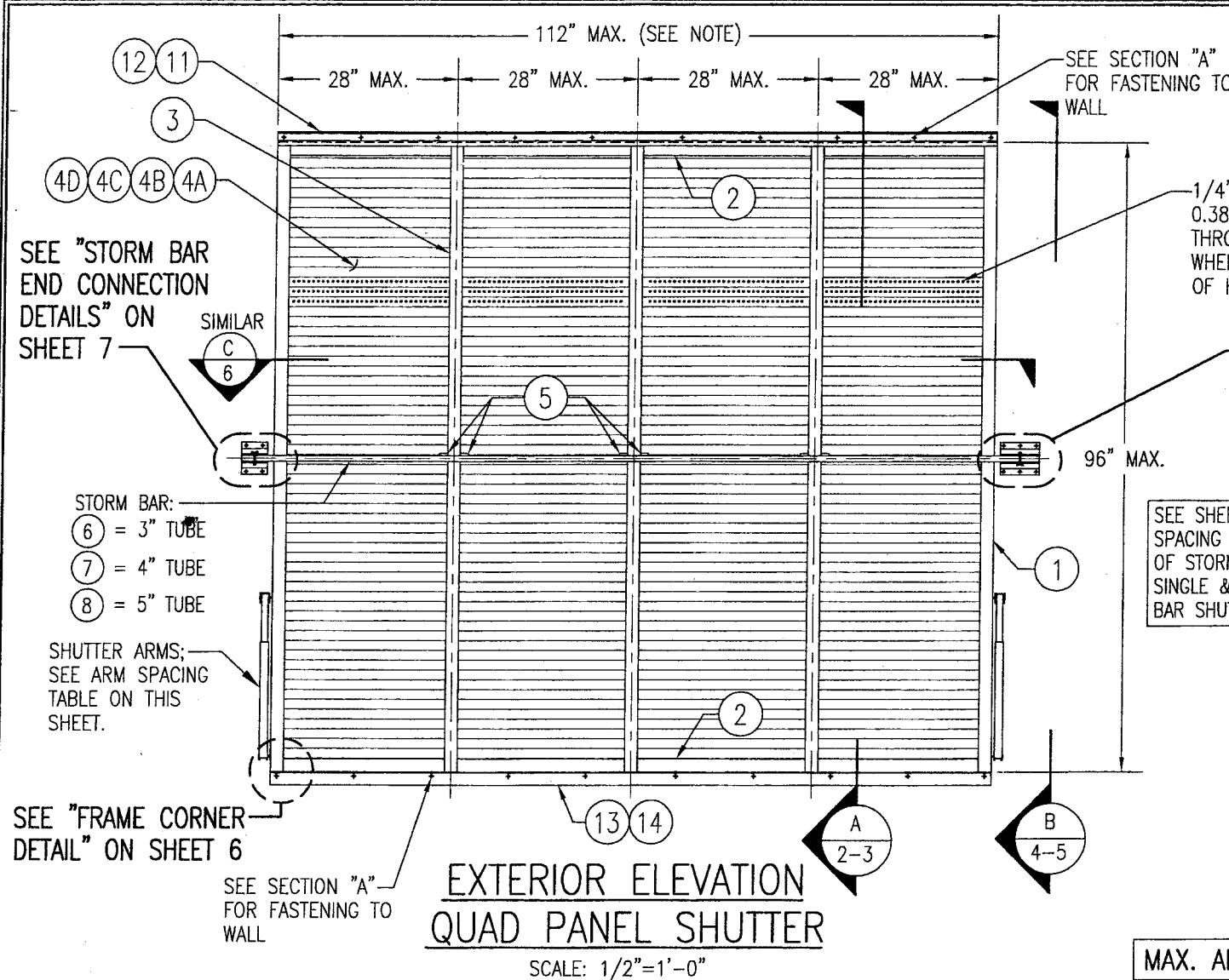
1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATIONS

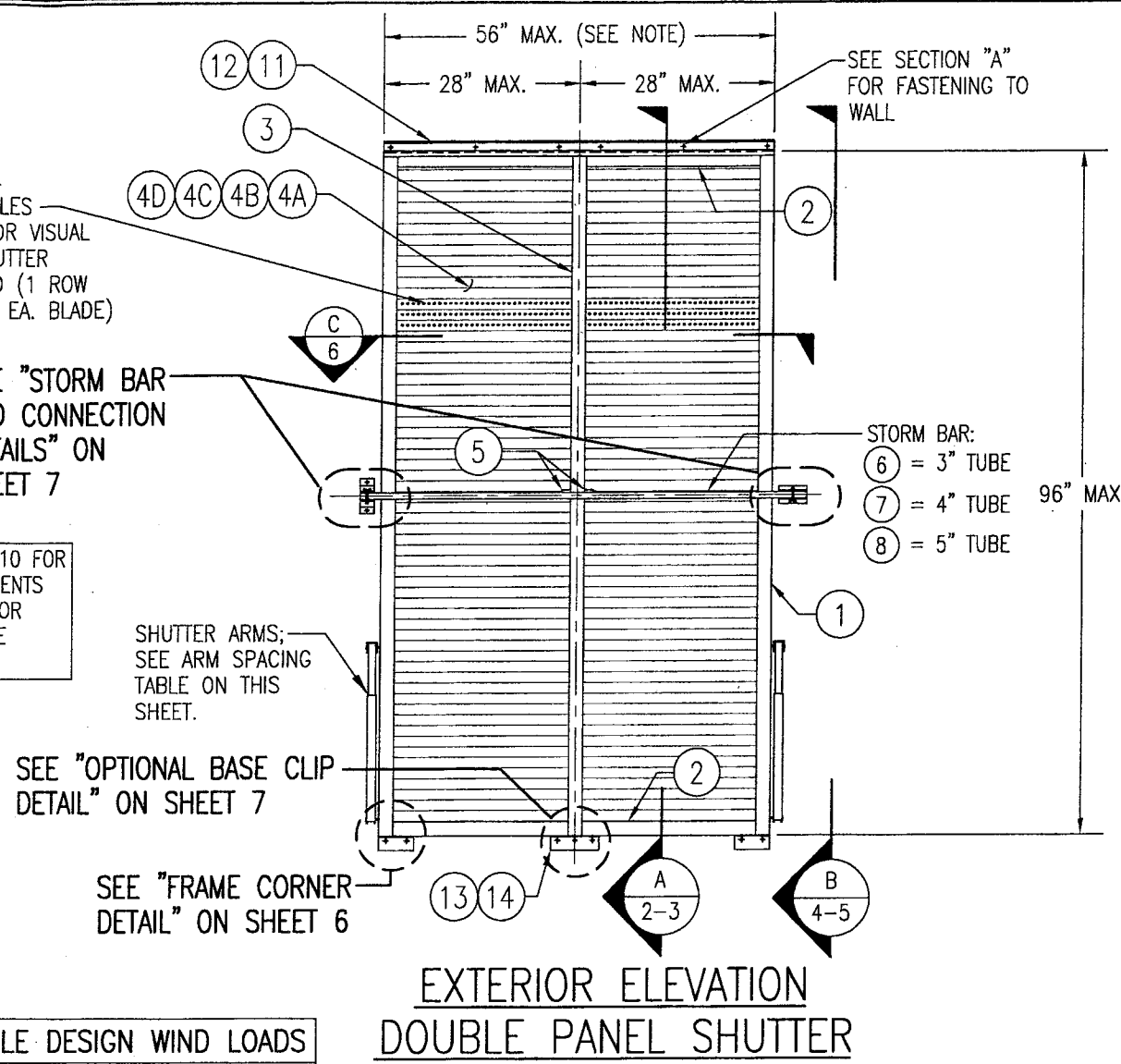
1. None.



Helmy A. Makar, P. E., M.S.
Product Control Examiner
NOA No 06-0831.02
Expiration Date: 11/15/2011
Approval Date: 12/28/2006



**EXTERIOR ELEVATION
QUAD PANEL SHUTTER**
SCALE: 1/2"=1'-0"



**EXTERIOR ELEVATION
DOUBLE PANEL SHUTTER**
SCALE: 1/2"=1'-0"

MAX. ALLOWABLE DESIGN WIND LOADS	
POSITIVE	NEGATIVE
80 PSF	80 PSF
SEE SHUTTER ELEVATIONS ON SHEET 9 & STORM BAR LOAD TABLES ON SHEETS 10 FOR LOADS AS CONTROLLED BY SHUTTER SPAN & STORM BAR SPACING.	

ARM SPACING TABLE	
MAXIMUM SHUTTER HEIGHT	MAXIMUM SPACING
36"	64"
42"	55"
48"	48"
60"	38"
72"	32"
84"	27"
96"	24"
SEE GENERAL NOTE NO. 3 WHEN USING THIS TABLE.	

NOTE: THE NUMBER OF PANELS IS GOVERNED BY:
 1. IF STORM BARS ARE REQUIRED, ANY NUMBER OF PANELS MAY BE USED PROVIDING THE OVERALL SHUTTER WIDTH DOES NOT EXCEED 112" & THE PANEL WIDTHS DO NOT EXCEED 28".
 2. IF NO STORM BARS ARE REQUIRED, ANY NUMBER OF PANELS MAY BE USED & THE SHUTTER OVERALL WIDTH MAY BE INFINITE PROVIDING THE PANEL WIDTHS DO NOT EXCEED 28".

STORM BAR NOTE: THE NUMBER OF STORM BARS REQUIRED WITH EACH SHUTTER TYPICALLY VARIES FROM 1 TO 3 & IS DEPENDENT ON SHUTTER SIZE & REQUIRED DESIGN PRESSURE. SEE ELEVATION SKETCHES & LOAD TABLES ON SHEETS 9 & 10 FOR STORM BAR REQUIREMENTS.

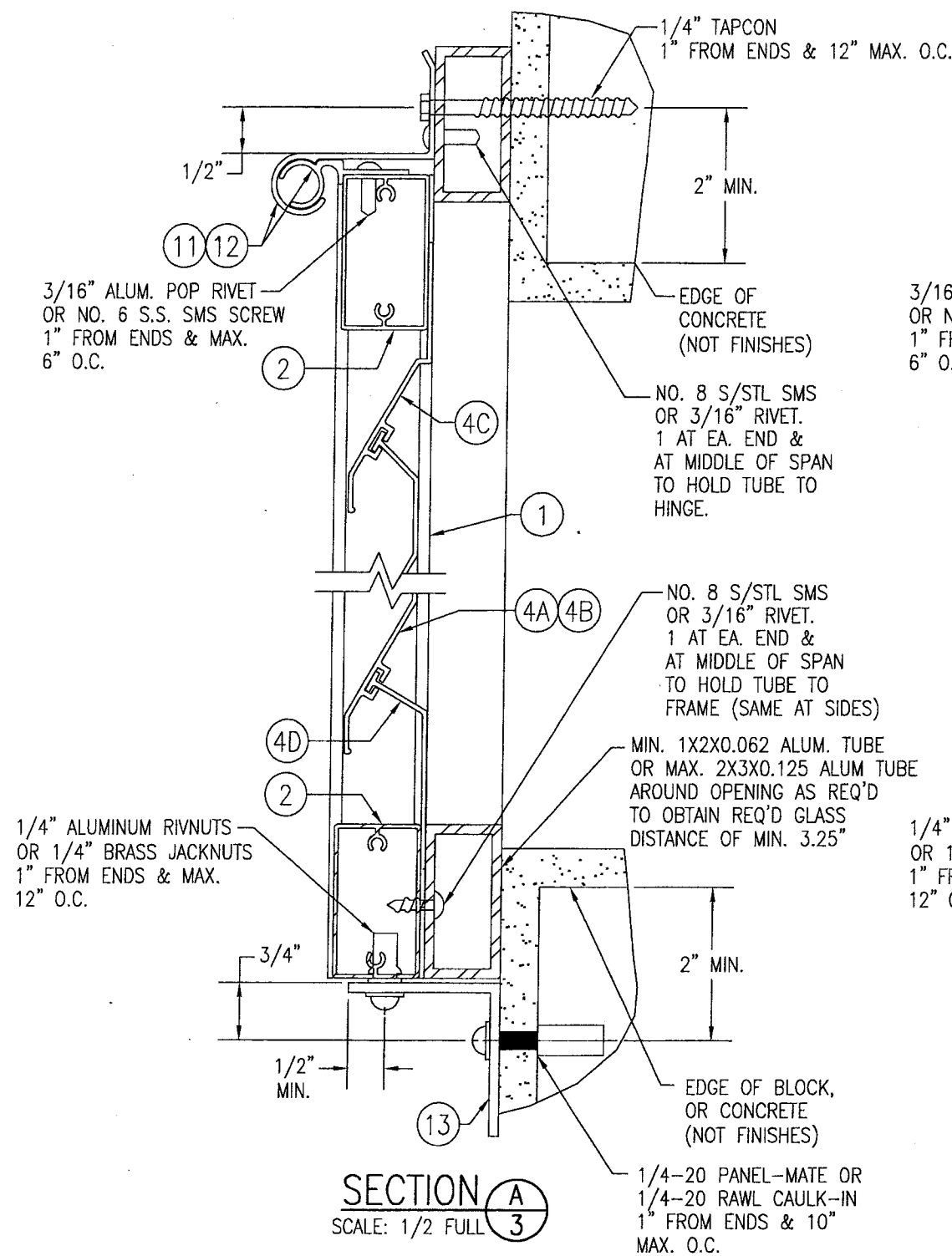
NOTE: SINGLE & THREE PANEL SHUTTERS ARE ALSO PART OF THIS APPROVAL.

GENERAL NOTES:

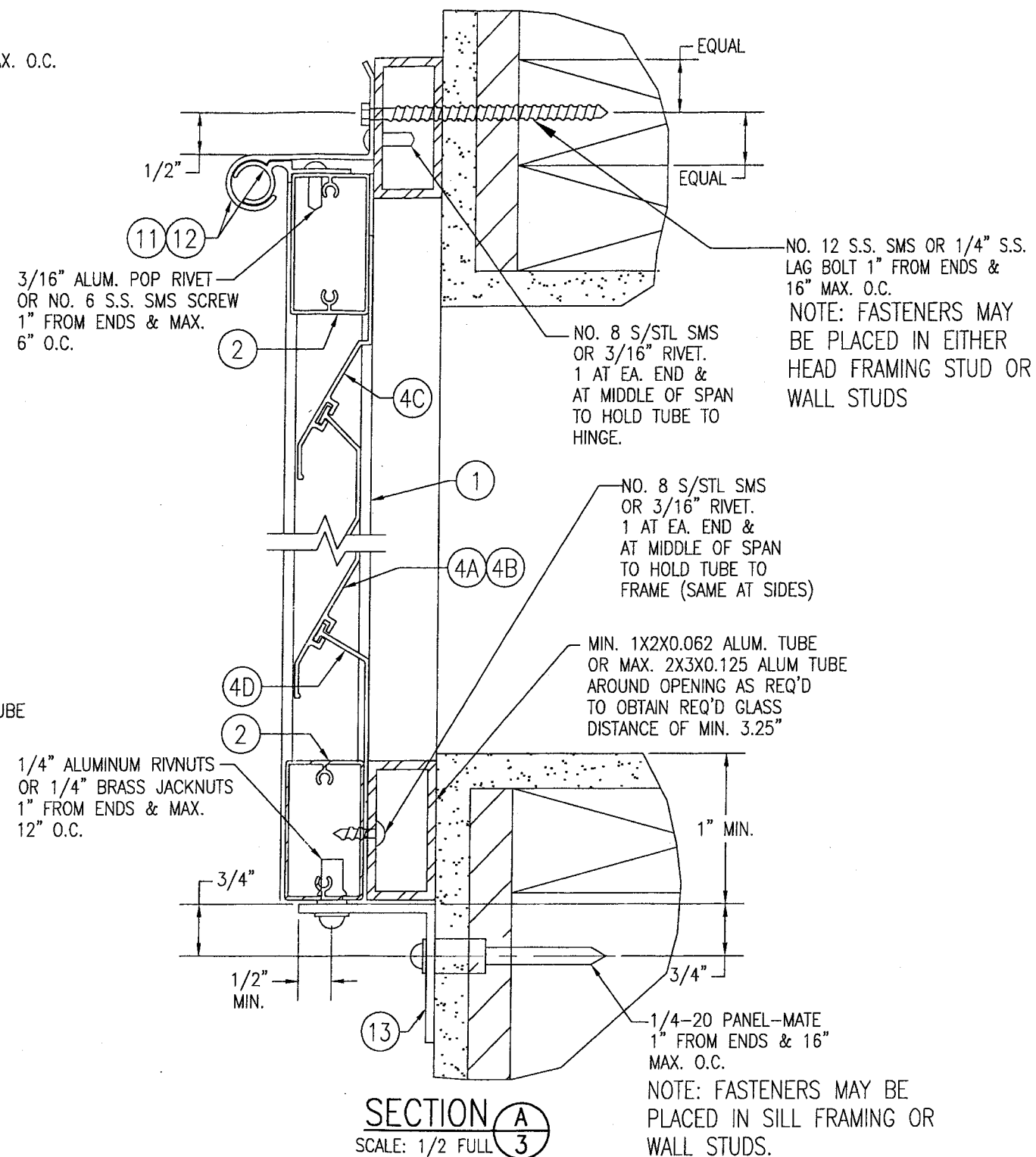
- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T5 ALLOY UNLESS SHOWN OTHERWISE ON THESE DRAWINGS.
- IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS SUPERIMPOSED BY THE SHUTTERS.
- THESE SHUTTER SYSTEMS ARE DESIGNED TO WITHSTAND WIND PRESSURES, IN THE OPEN POSITION, RESULTING FROM GUST WIND SPEEDS UP TO 90 MPH (75 MPH SUSTAINED WIND SPEEDS). THE SHUTTER MUST BE CLOSED WHEN WIND SPEEDS ARE IN EXCESS OF 90 MPH GUST OR 75 MPH SUSTAINED. WHEN CLOSED, THE OWNER SHALL BE RESPONSIBLE FOR SECURING THE SHUTTER AS REQ'D.
- THESE SHUTTER SYSTEMS HAVE BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE 2004 FLORIDA BUILDING CODE (FBC) AND FBC PROTOCOLS TAS-201, 202 & 203.
- EACH SHUTTER SHALL HAVE A LEGABLE & READILY VISIBLE MARKING INSTRUCTING THE OWNER/TENNANT TO SECURE THE SHUTTER WITH BRACKETS & STORM BARS, PER THESE APPROVED DRAWINGS, DURING PERIODS OF HURRICANE WARNINGS.
- EACH SHUTTER ASSEMBLY SHALL BE PERMANENTLY LABELED AS FOLLOWS:
 FOLDING SHUTTER CORPORATION
 WEST PALM BEACH, FLORIDA
 MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED
- ALL CONCRETE SUBSTRATE SHALL BE MIN. 3000 PSI.
- ALL WOOD SUBSTRATE SHALL HAVE MIN. G = 0.55 DENSITY.
- SHUTTERS MUST BE PLACED SUCH THAT THE MINIMUM DISTANCE BETWEEN THE SHUTTER AND THE GLASS IT PROTECTS IS 3.25".

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No. 06-0831.02
 Expiration Date 11/15/2011
 By *Helmut H. Moller*
 Miami Dade Product Control Division

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1-24		DATE: 12/08/00	
DATE	BY	REVISION DESCRIPTION	NO.
10/10/05	WWS	A1 UPDATE TO 2004 FBC	
IMPACT BAHAMA SHUTTER (DADE) MANUFACTURER: FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811 CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903 CERTIFICATION: AUG 09 2006 WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO. 1018		REV. A	
SHEET NO. 1		OF 10	



(BUILD-OUT MOUNT ONTO BLOCK/CONCRETE)



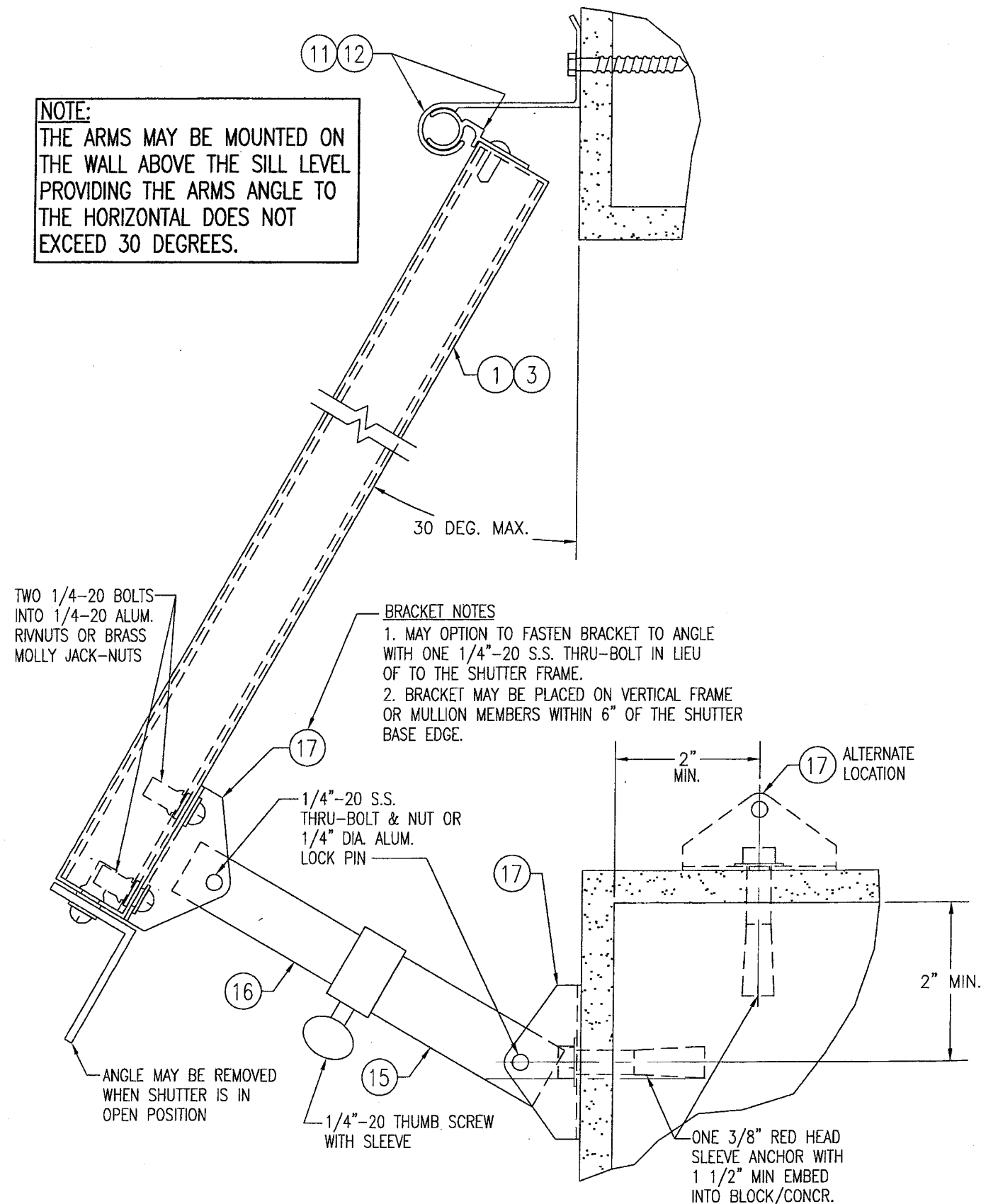
(BUILD-OUT MOUNT ONTO WOOD FRAME)

FOR FASTENER EDGE DISTANCE & SPACING REQUIREMENTS, SEE SHEET 2.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 06-0831.02
Expiration Date 11/15/2011
By *Heung A. Mui*
Miami Dade Product Control
Division

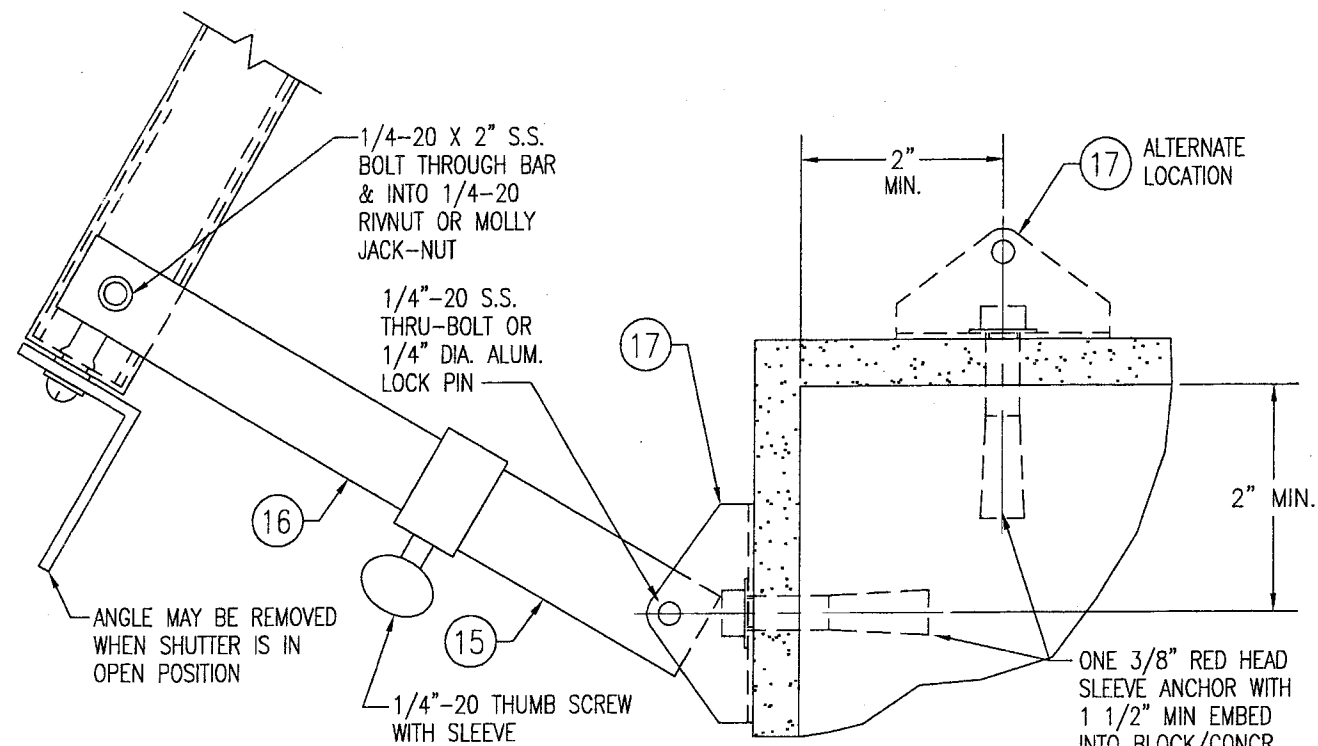
DRAWN BY: W.W.S.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 12/08/00
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE IMPACT BAHAMA SHUTTER (DADE)	MANUFACTURER FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903	P.E. WARREN W. SCHAEFER, P.E. P.E. NO. 44135
CERTIFICATION AUG 06 2006	DRAWING NO. 1018
	REV. A
	SHEET NO. 3 OF 10

NOTE:
THE ARMS MAY BE MOUNTED ON THE WALL ABOVE THE SILL LEVEL PROVIDING THE ARMS ANGLE TO THE HORIZONTAL DOES NOT EXCEED 30 DEGREES.

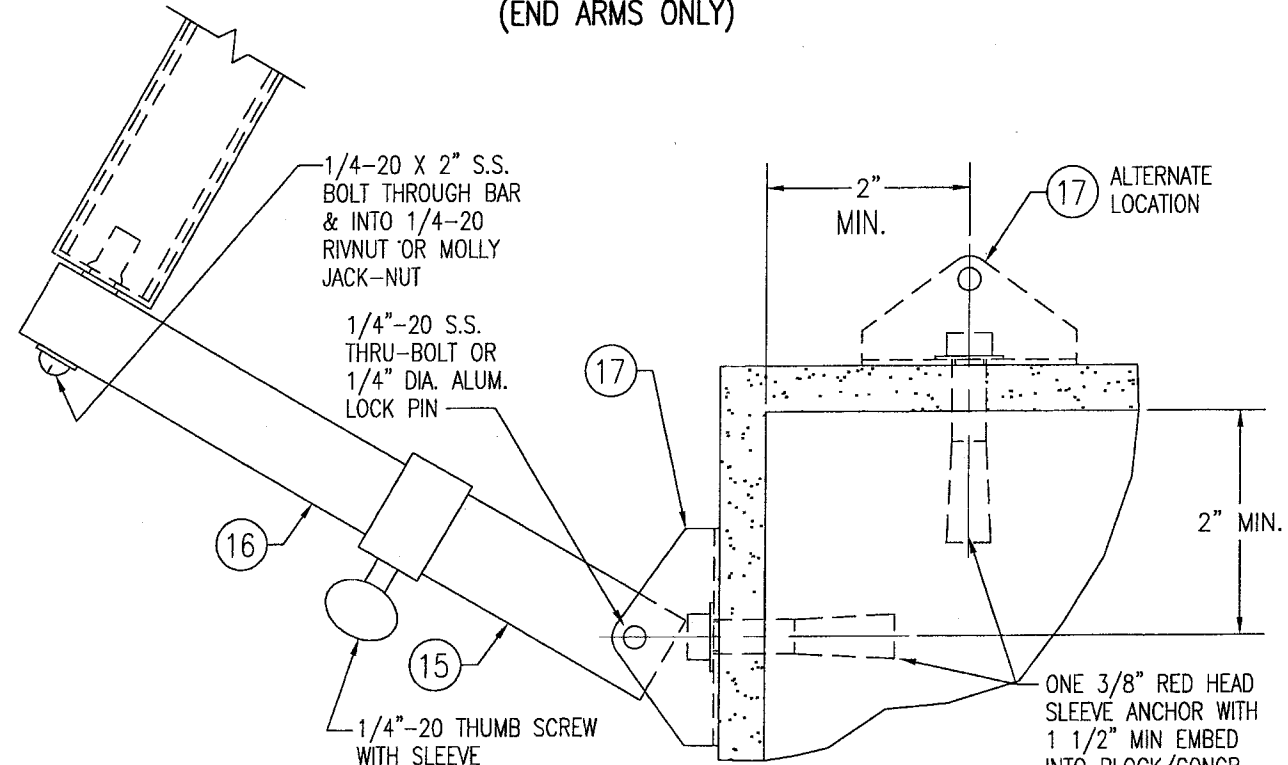


SECTION B
SCALE: 1/2 FULL

(OPEN SHUTTER AT FACE MOUNT CONDITION TO BLOCK/CONCRETE)
SEE "ARM SPACING TABLE" ON SHEET 1 FOR SPACING OF ARMS



ALTERNATE TO SECTION B ON THIS SHEET
(END ARMS ONLY)



ALTERNATE TO SECTION B ON THIS SHEET

FOR FASTENER EDGE DISTANCE & SPACING REQUIREMENTS, SEE SHEET 2.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 06-0831-02
Expiration Date 11/15/2011
By *Helmut A. Mader*
Miami Dade Product Control
Division

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 12/08/00	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE IMPACT BAHAMA SHUTTER (DADE)		MANUFACTURER FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903			
CERTIFICATION AUG 09 2006 WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO. 1018		REV. A	
SHEET NO. 4 OF 10			

NOTE:
THE ARMS MAY BE MOUNTED ON
THE WALL ABOVE THE SILL LEVEL
PROVIDING THE ARMS ANGLE TO
THE HORIZONTAL DOES NOT
EXCEED 30 DEGREES.

TWO 1/4"-20 BOLTS
INTO 1/4"-20 ALUM.
RIVNUTS OR BRASS
MOLLY JACK-NUTS

BRACKET NOTES

1. MAY OPTION TO FASTEN BRACKET TO ANGLE WITH ONE 1/4"-20 S.S. THRU-BOLT IN LIEU OF TO THE SHUTTER FRAME.
2. BRACKET MAY BE PLACED ON VERTICAL FRAME OR MULLION MEMBERS WITHIN 6" OF THE SHUTTER BASE EDGE.

1/4"-20 S.S.
THRU-BOLT & NUT OR
1/4" DIA. ALUM.
LOCK PIN

ANGLE MAY BE REMOVED
WHEN SHUTTER IS IN
OPEN POSITION

1/4"-20 THUMB SCREW
WITH SLEEVE

3/4" MIN. 17 ALTERNATE LOCATION

2 NO. 12 S.S. SMS

1/4" S.S. LAG BOLT
OR 1/4" PANELMATE
INTO WOOD FRAMING STUDS

SECTION B
SCALE: 1/2 FULL 5

(OPEN SHUTTER AT FACE MOUNT CONDITION TO WOOD FRAMING)
SEE "ARM SPACING TABLE" ON SHEET 1 FOR SPACING OF ARMS

1/4"-20 X 2" S.S.
BOLT THROUGH BAR
& INTO 1/4"-20
RIVNUT OR MOLLY
JACK-NUT

1/4"-20 S.S.
THRU-BOLT OR
1/4" DIA. ALUM.
LOCK PIN

ANGLE MAY BE REMOVED
WHEN SHUTTER IS IN
OPEN POSITION

1/4"-20 THUMB SCREW
WITH SLEEVE

3/4" MIN.

17 ALTERNATE LOCATION

3/4" MIN.

2 NO. 12 S.S. SMS

1/4" S.S. LAG BOLT
OR 1/4" PANELMATE INTO
WOOD FRAMING STUD

ALTERNATE TO SECTION B ON THIS SHEET
(END ARMS ONLY)

1/4"-20 X 2" S.S.
BOLT THROUGH BAR
& INTO 1/4"-20
RIVNUT OR MOLLY
JACK-NUT

1/4"-20 S.S.
THRU-BOLT OR
1/4" DIA. ALUM.
LOCK PIN

3/4" MIN.

17 ALTERNATE LOCATION

3/4" MIN.

2 NO. 12 S.S. SMS

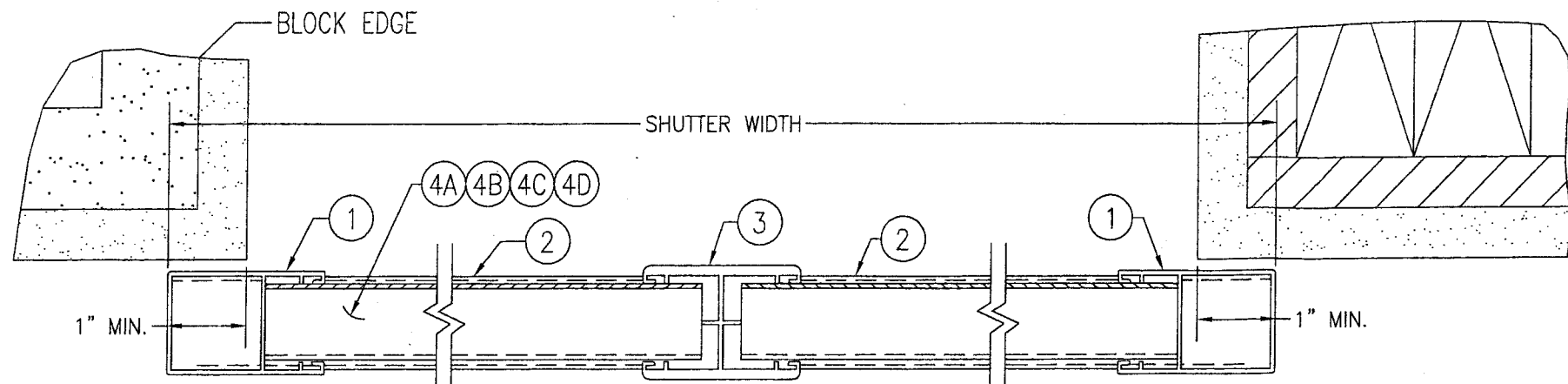
1/4" S.S. LAG BOLT
OR 1/4" PANELMATE INTO
WOOD FRAMING STUDS

ALTERNATE TO SECTION B ON THIS SHEET

FOR FASTENER EDGE DISTANCE & SPACING
REQUIREMENTS, SEE SHEET 2.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 06-0831-02
Expiration Date 11/15/2011
By *Heidi A. Miller*
Miami Dade Product Control
Division

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 12/08/00	
NO.	REVISION DESCRIPTION	DATE	BY
DRAWING TITLE IMPACT BAHAMA SHUTTER (DADE)		MANUFACTURER FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903		CERTIFICATION AUG 0 2 2006 WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
DRAWING NO. 1018	REV. A	SHEET NO. 5 OF 10	

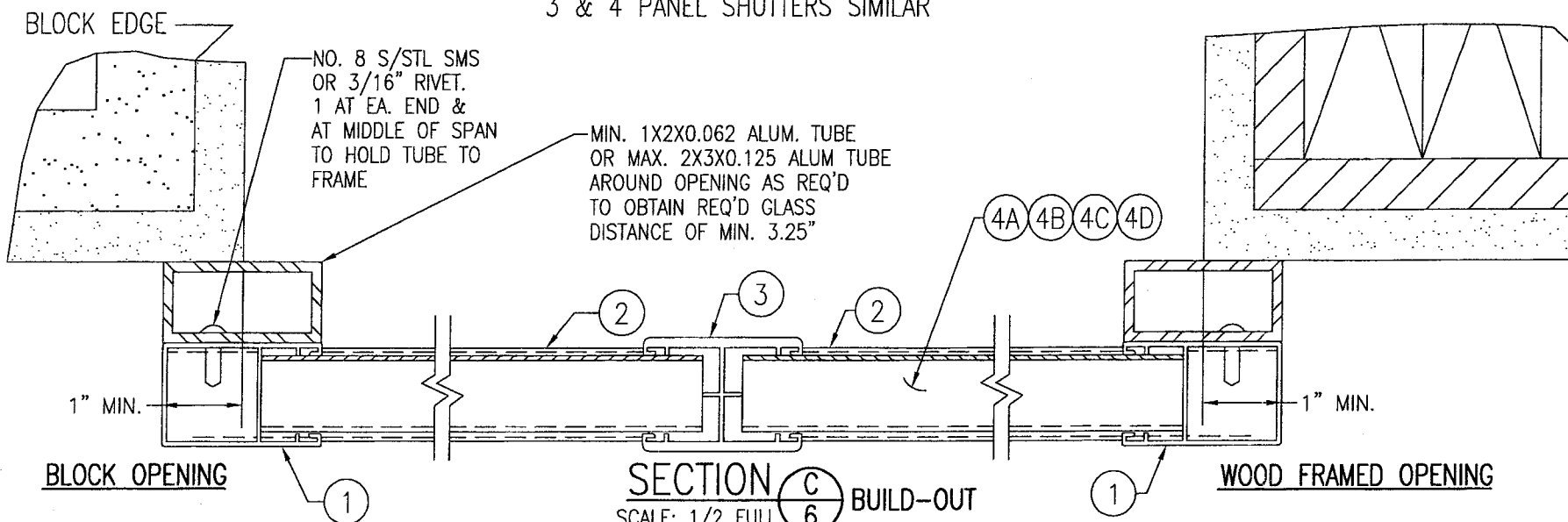


BLOCK OPENING

SECTION C FLUSH MOUNT
SCALE: 1/2 FULL

WOOD FRAMED OPENING

STORM BAR & ARMS NOT SHOWN FOR CLARITY!
3 & 4 PANEL SHUTTERS SIMILAR

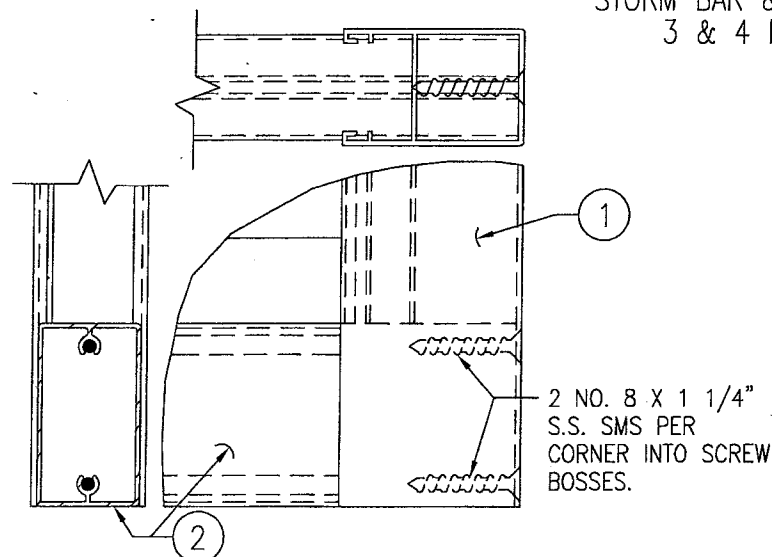


BLOCK OPENING

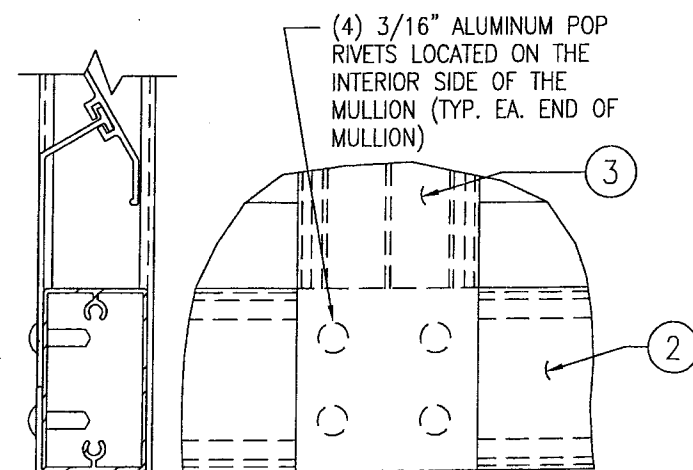
SECTION C BUILD-OUT
SCALE: 1/2 FULL

WOOD FRAMED OPENING

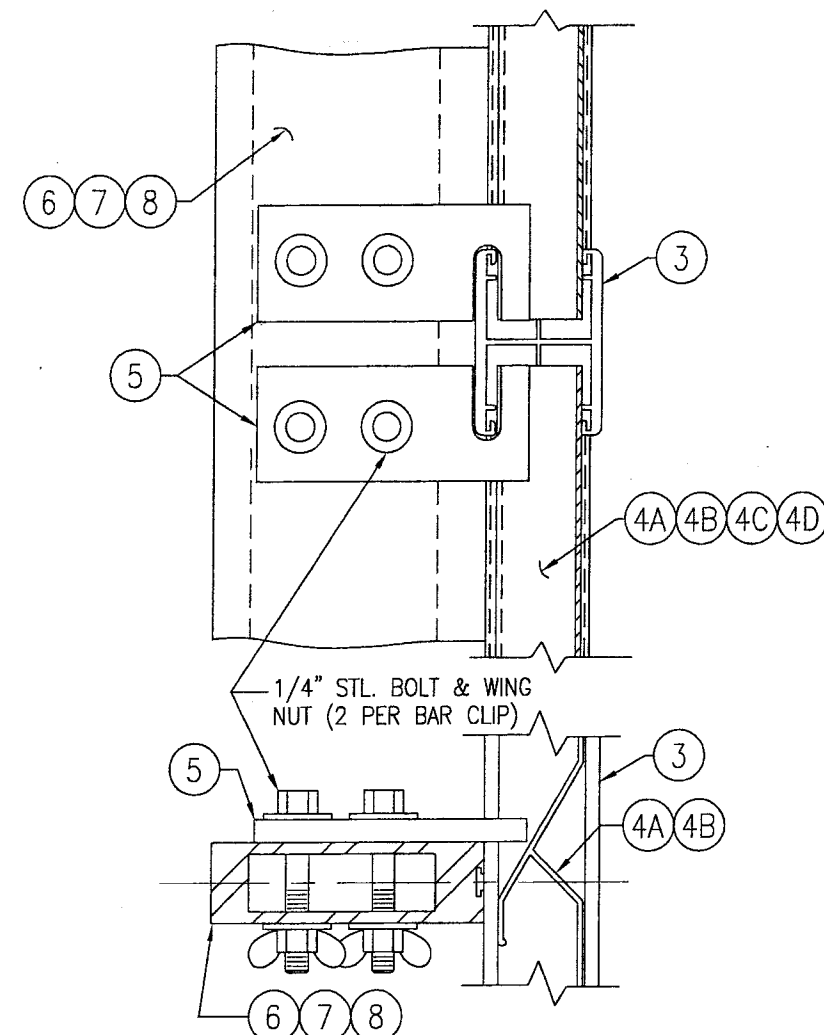
STORM BAR & ARMS NOT SHOWN FOR CLARITY!
3 & 4 PANEL SHUTTERS SIMILAR



GUT OUT ① AND PROJECT ② INTO ①
FRAME CORNER DETAIL
SCALE: 1/2 FULL SIZE



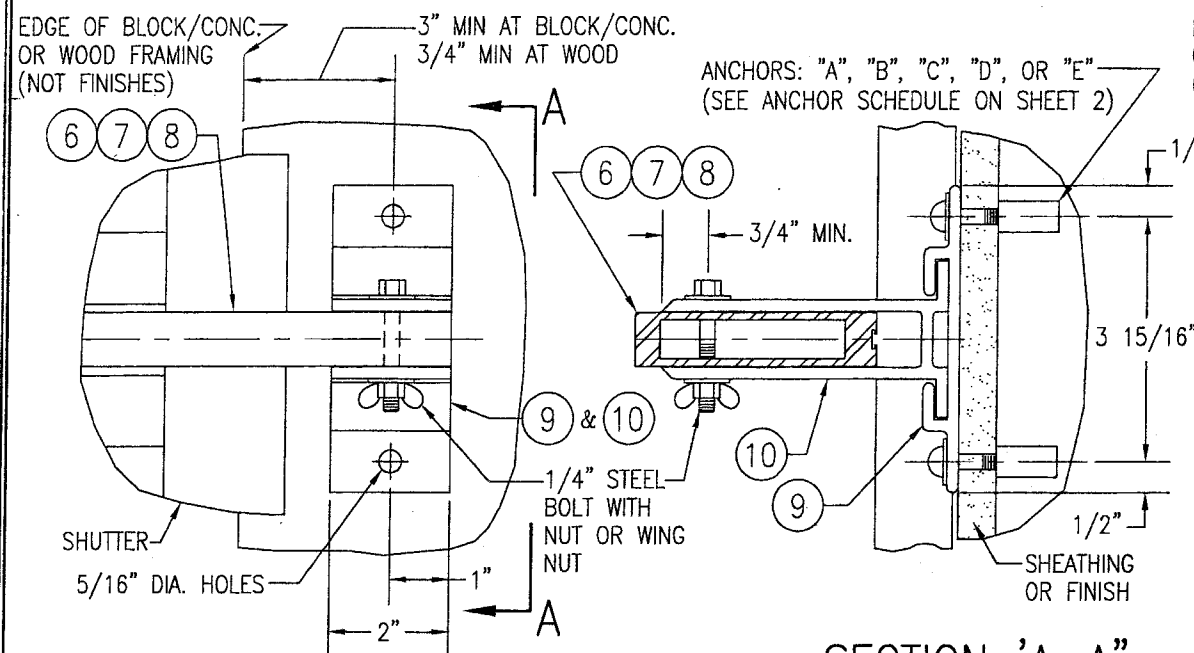
GUT OUT ③ AND PROJECT ③ OVER ②
MULLION END DETAIL
SCALE: 1/2 FULL SIZE



STORM BAR TO FRAME
CONNECTION DETAIL
SCALE: 1/2 FULL

PRODUCT REVISED
to comply with the Florida
Building Code
Acceptance No. 06-0831-02
Expiration Date 11/15/2011
By: *Helmut A. Mader*
Michael D. Product Control
Division

DRAWN BY: W.W.S.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 12/08/00
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE: IMPACT BAHAMA SHUTTER (DADE)	
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4802 FAX: 561-775-4803	MANUFACTURER: FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811
CERTIFICATION: AWG 09-2006	WARREN W. SCHAEFER, P.E. P.E. NO. 44135
DRAWING NO. 1018	REV. A
SHEET NO. 6	OF 10

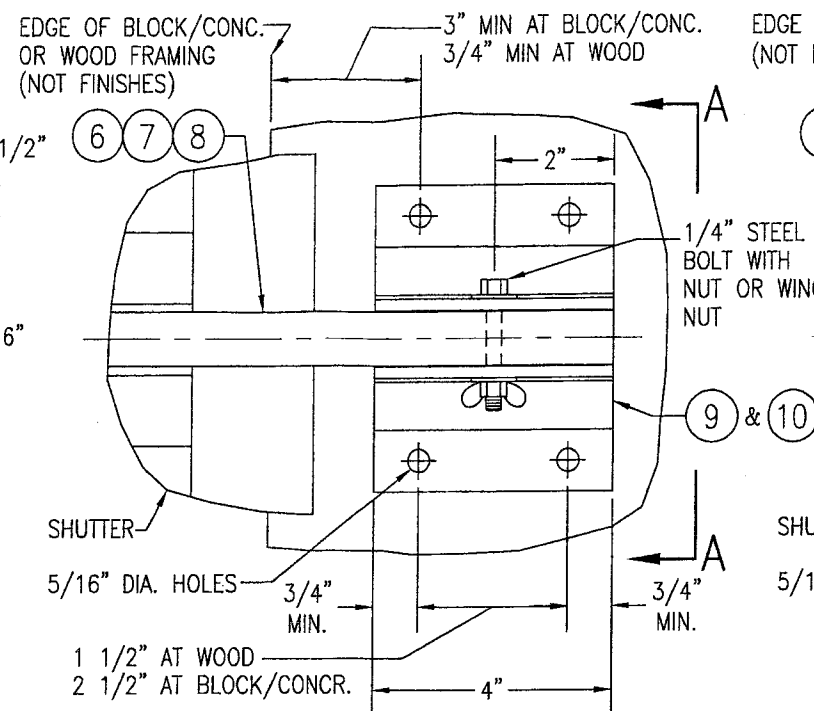


STORM BAR END CONNECTION "A"

SCALE: 1/3 FULL SIZE

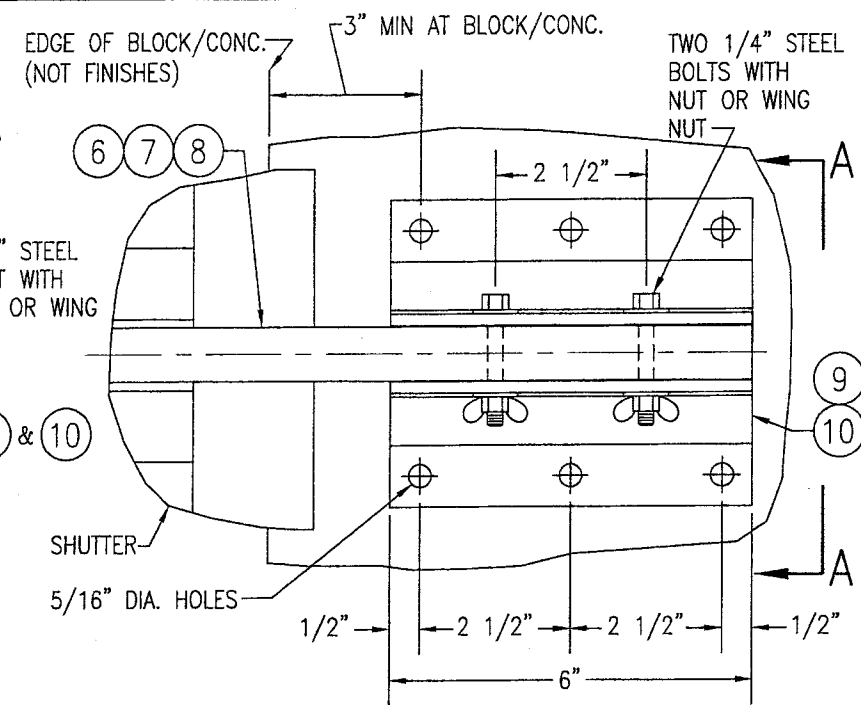
SECTION 'A-A'

SCALE: 1/3 FULL SIZE



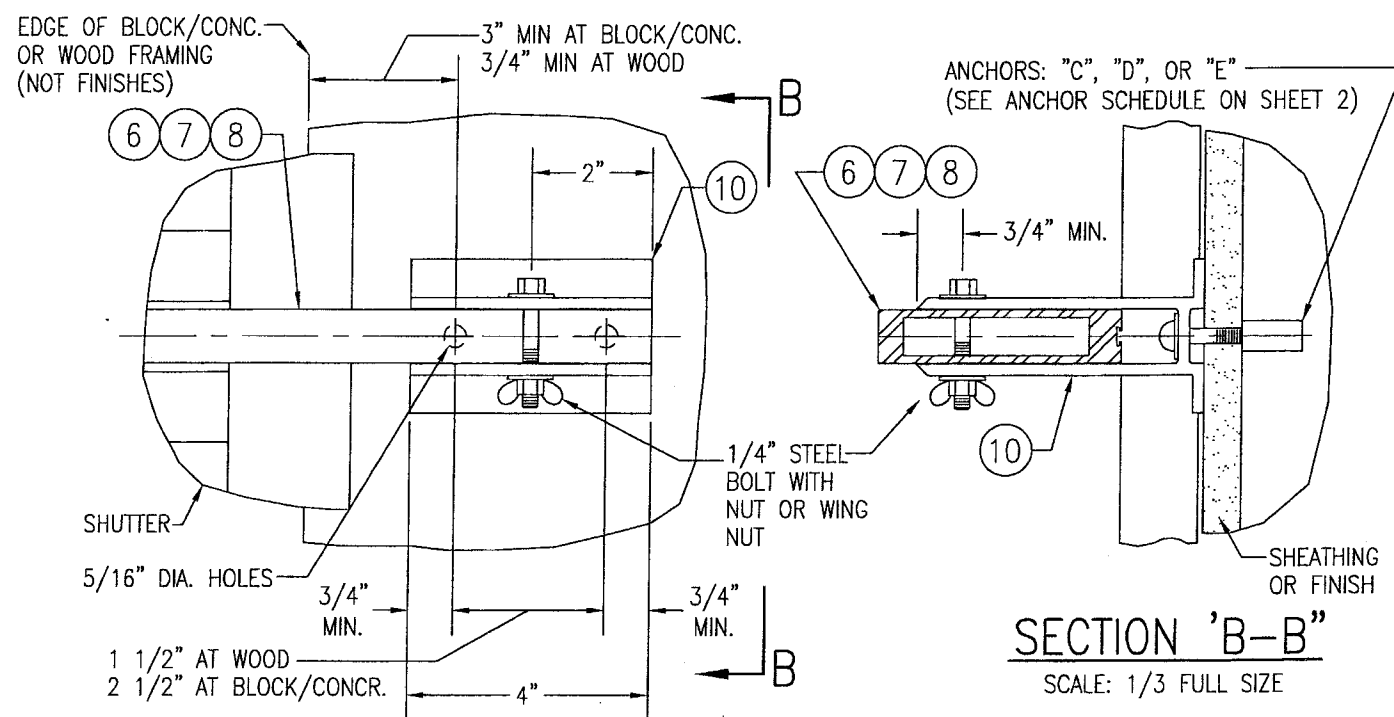
STORM BAR END CONNECTION "C"

SCALE: 1/3 FULL SIZE



STORM BAR END CONNECTION "D"

SCALE: 1/3 FULL SIZE

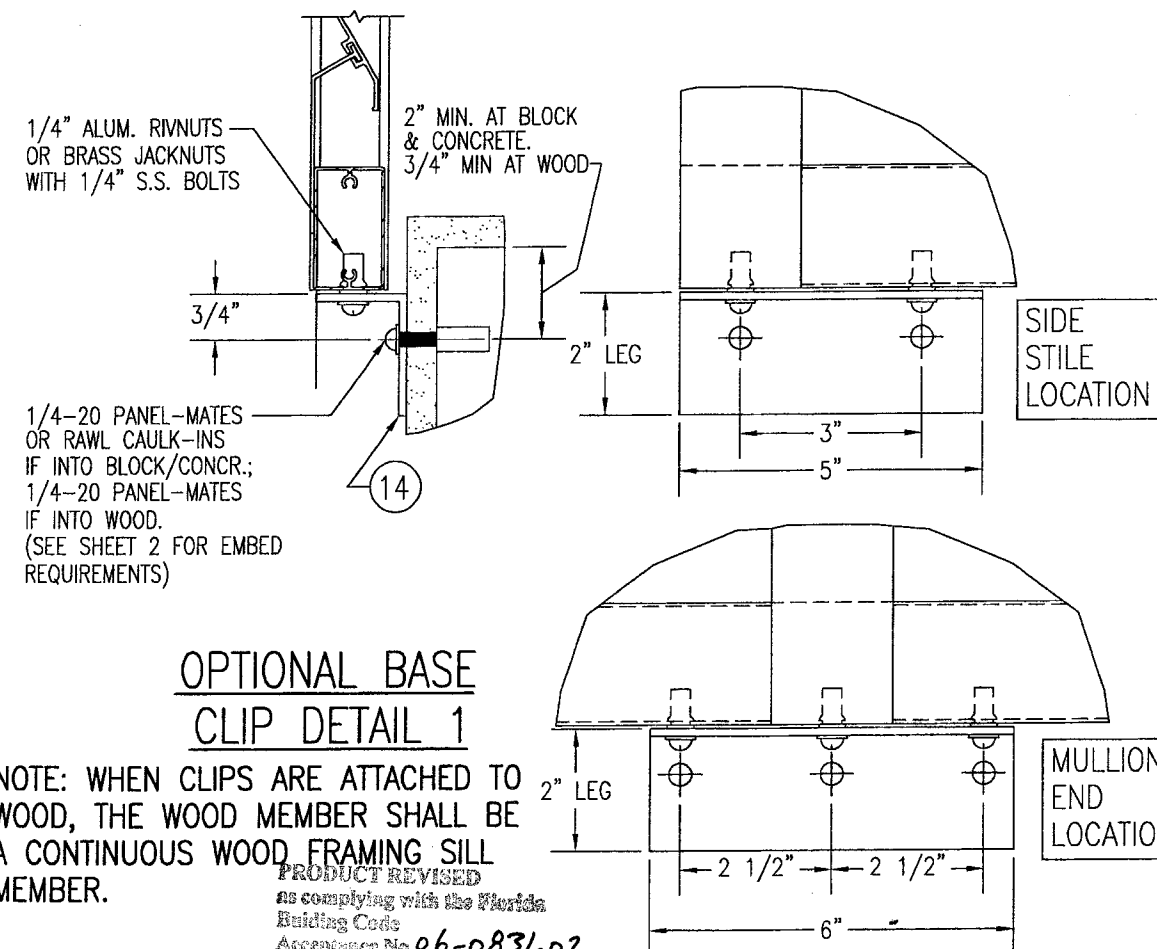


STORM BAR END CONNECTION "B"

SCALE: 1/3 FULL SIZE

SECTION 'B-B'

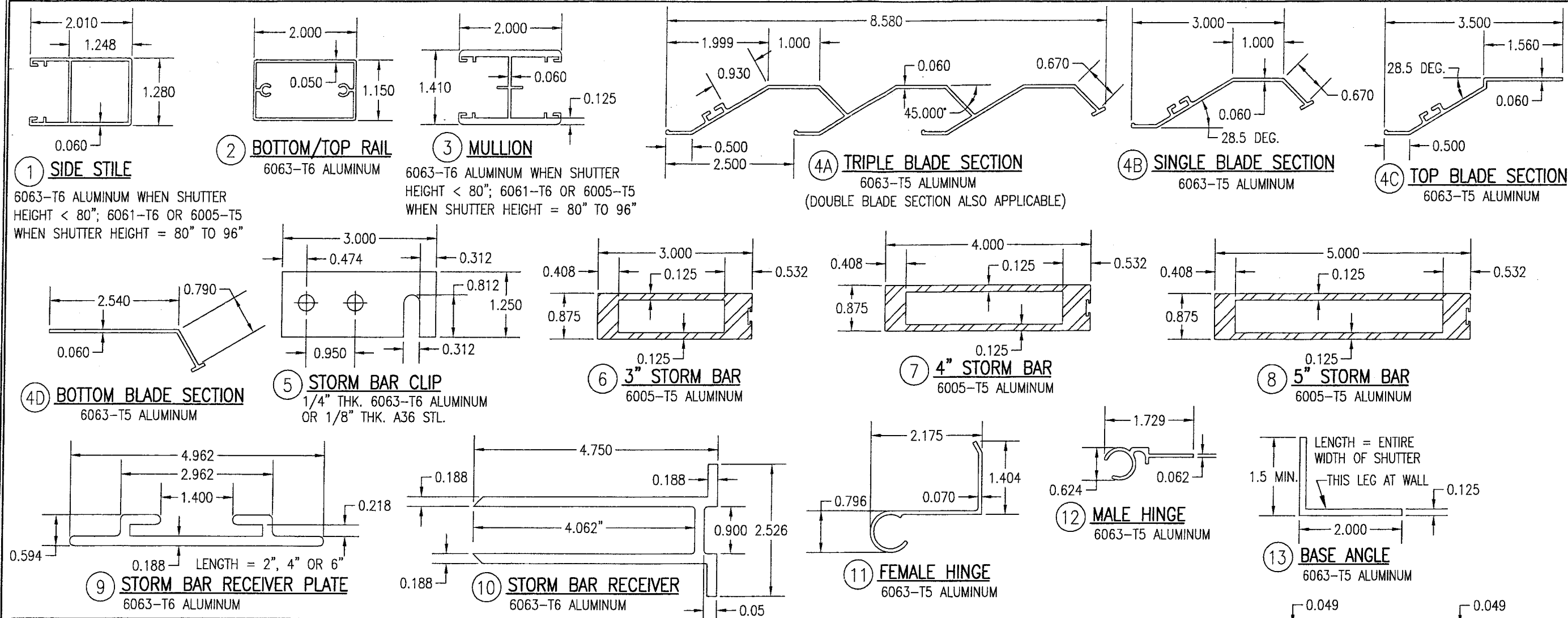
SCALE: 1/3 FULL SIZE



NOTE: WHEN CLIPS ARE ATTACHED TO WOOD, THE WOOD MEMBER SHALL BE A CONTINUOUS WOOD FRAMING SILL MEMBER.

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By *Helmut A. Mader*
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Division

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=3		DATE: 12/08/00	
NO.	REVISION	DESCRIPTION	DATE
DRAWING TITLE IMPACT BAHAMA SHUTTER (DADE)			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.		MANUFACTURER FOLDING SHUTTER CORPORATION	
8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903		7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811	
CERTIFICATION <i>Aug 9 2000</i>		P.E. NO. 44135 WARREN W. SCHAEFER, P.E.	
DRAWING NO. 1018		REV. A	
SHEET NO. 7		OF 10	



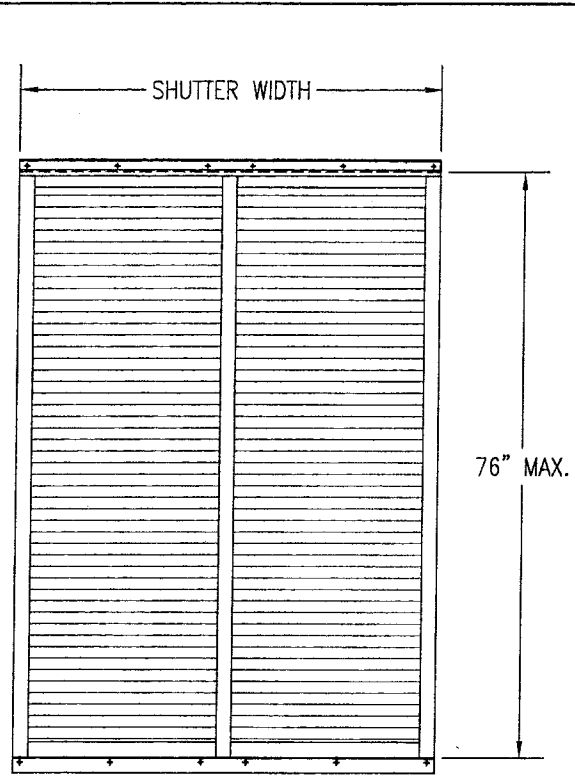
MATERIAL LIST

NO.	DESCRIPTION	NOTES
1	SIDE STILE	
2	TOP & BOTTOM RAIL	
3	MULLION	
4A	DOUBLE OR TRIPLE BLADE SECTION	MAIN BLADE SECTION
4B	SINGLE BLADE SECTION	USED AS FILLER WHEN REQUIRED
4C	TOP SHUTTER BLADE	
4D	BOTTOM SHUTTER BLADE	
5	STORM BAR CLIP	SECURES STORM BAR TO SHUTTER PANEL FRAMES
6	3" STORM BAR	
7	4" STORM BAR	
8	5" STORM BAR	
9	STORM BAR RECEIVER PLATE	GRABS THE STORM BAR END CONNECTOR
10	STORM BAR RECEIVER	
11	FEMALE HINGE	
12	MALE HINGE	
13	CONTINUOUS BASE ANGLE	SHUTTER LEG LENGTH VARIES W/SHUTTER WALL OFFSET
14	OPTIONAL BASE ANGLE	PLACED AT MULLION & SIDE FRAME ENDS
15	OUTER ARM	POSITION PER DETAILS & SPACING TABLE
16	INNER ARM	POSITION PER DETAILS & SPACING TABLE
17	SHUTTER ARM SUPPORT BRACKET	ARM TO SHUTTER & WALL

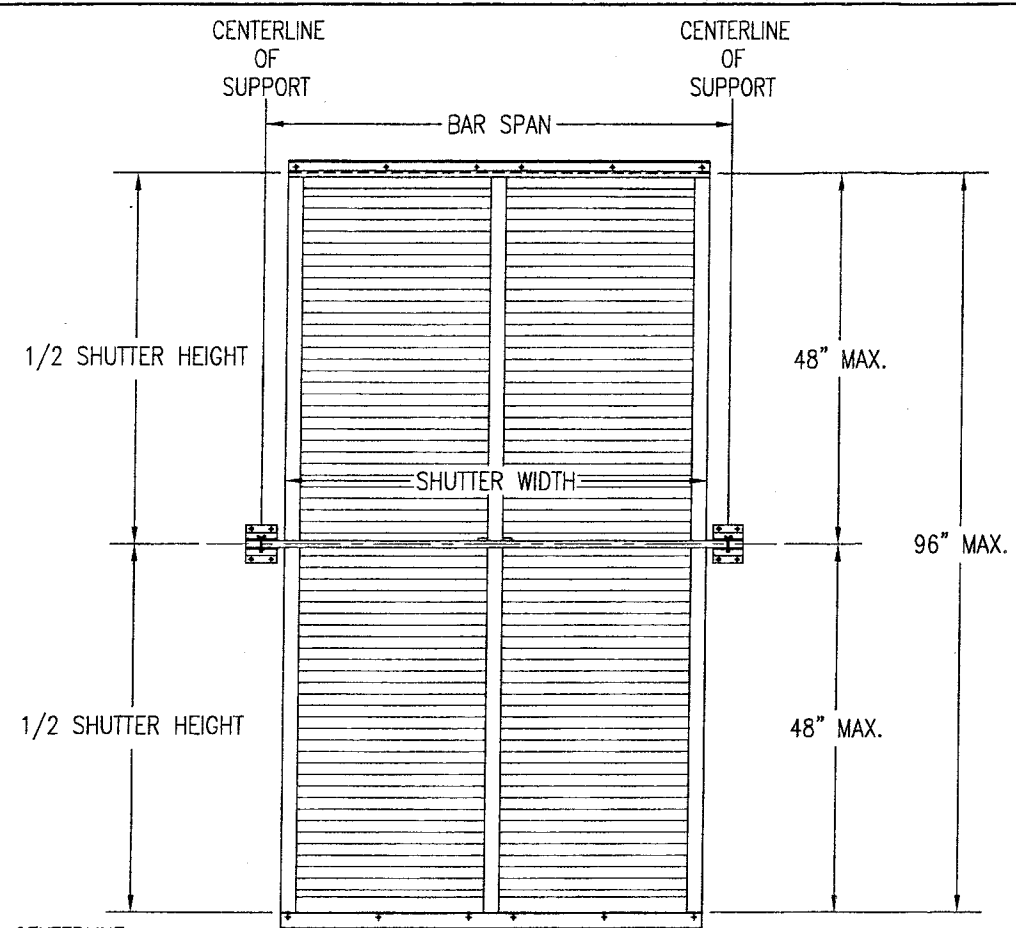
NOTE: ALL DETAILS ARE DRAWN TO 1/2 FULL SIZE UNLESS NOTED OTHERWISE.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 06-0831.02
Expiration Date 11/15/2011
By *Heather A. Miller*
Miami Dade Product Control
Division

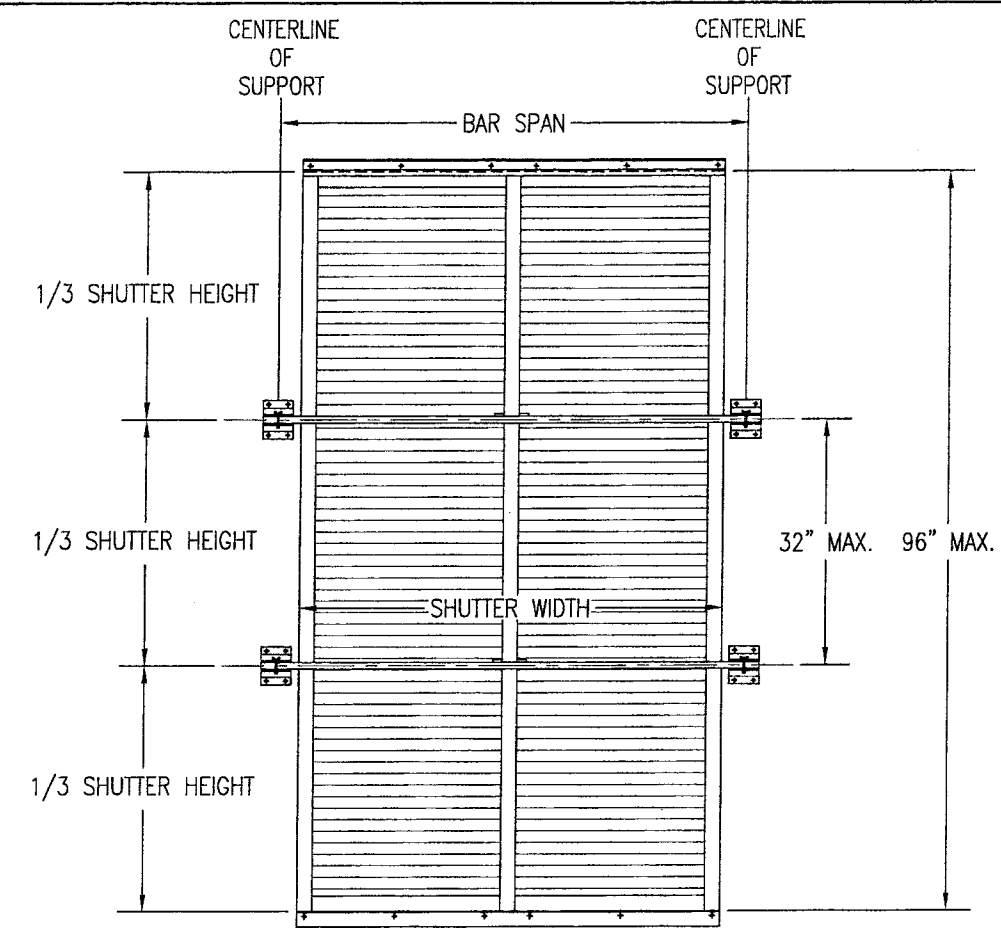
DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 12/08/00	
DATE	BY	REVISION	DESCRIPTION
IMPACT BAHAMA SHUTTER (DADE)			
MANUFACTURER FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903			
DRAWING TITLE			
CERTIFICATION AUG 9 2006			
DRAWING NO. 1018			
SHEET NO. 8 OF 10			



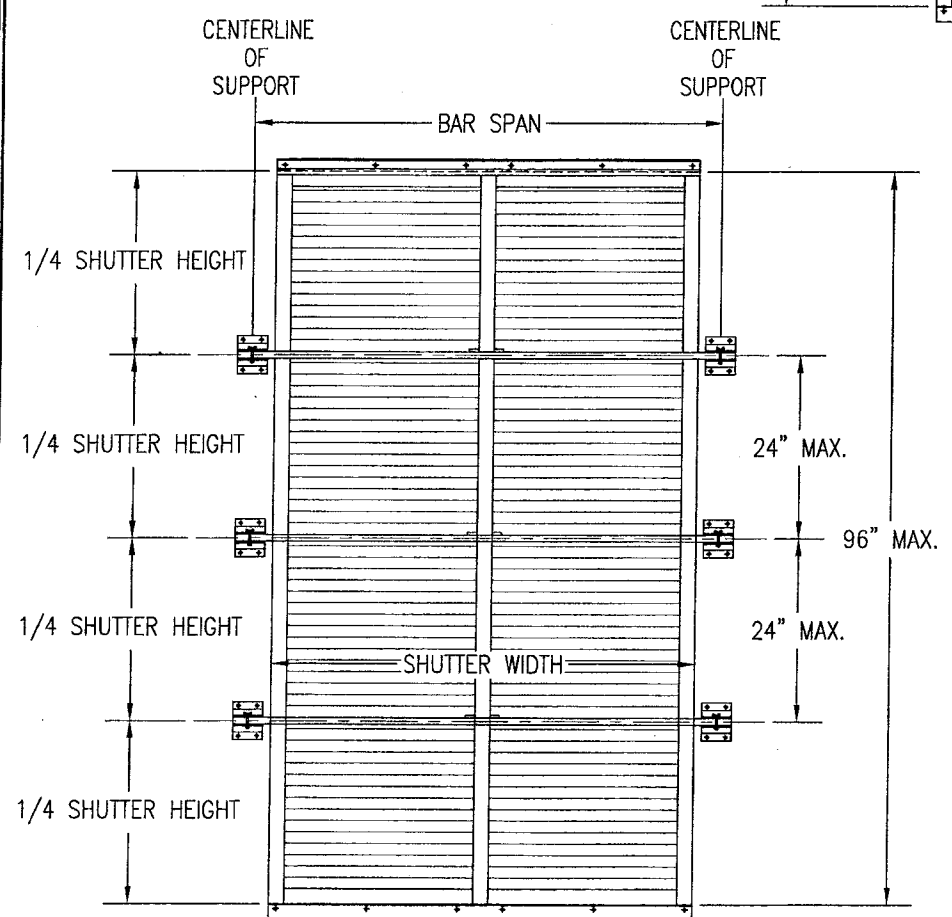
NO BARS
(SINGLE SPAN SHUTTER)



SINGLE BAR
(TWO SPAN SHUTTER)



TWO BARS
(THREE SPAN SHUTTER)



THREE BARS
(FOUR SPAN SHUTTER)

ALLOWABLE PRESSURE TABLE FOR SINGLE SPAN SHUTTERS (NO BARS)		
SHUTTER HEIGHT	PRESSURE (PSF)	
	POS	NEG
56" & LESS	65.0	65.0
58"	60.6	60.6
60"	56.6	56.6
62"	53.0	53.0
64"	49.8	49.8
66"	46.8	46.8
68"	44.1	44.1
70"	41.6	41.6
72"	39.3	39.3
74"	37.2	37.2
76"	34.5	35.3

NOTE:
1. ALL SHUTTERS MUST BE PLACED A MIN. DISTANCE OF 3.25" AWAY FROM THE GLASS.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 06-0831.02
Expiration Date 11/15/2011
By *Heather A. Miller*
Miami Dade Product Control
Division

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=24		DATE: 12/08/00	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE: IMPACT BAHAMA SHUTTER (DADE)			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.		MANUFACTURER FOLDING SHUTTER CORPORATION	
8895 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903		7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811	
CERTIFICATION <i>W. W. Schaefer</i> WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO. 1018		REV. A	
SHEET NO. 9		OF 10	

PRESSURE LOAD TABLE FOR STORM BARS & BAR END CONNECTIONS									
SHUTTER WIDTH (IN)	HEIGHT OR BAR SPACING (IN)	ALLOWABLE PRESSURE (PSF) AS CONTROLLED BY BARS			ALLOWABLE PRESSURE (PSF) AS CONTROLLED BY BAR END CONNECTIONS				
		3" BAR	4" BAR	5" BAR	CONN "A" & "B"		CONN "C"		CONN "D"
					WOOD	BLOCK/CONC	WOOD	BLOCK/CONC	BLOCK/CONC
30	36	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	42	80.0	80.0	80.0	80.0	72.4	80.0	80.0	80.0
	48	80.0	80.0	80.0	80.0	63.4	80.0	80.0	80.0
36	30	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	36	80.0	80.0	80.0	80.0	70.4	80.0	80.0	80.0
	42	80.0	80.0	80.0	80.0	60.3	80.0	80.0	80.0
	48	80.0	80.0	80.0	80.0	52.8	80.0	80.0	80.0
42	24	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	30	80.0	80.0	80.0	80.0	72.4	80.0	80.0	80.0
	36	80.0	80.0	80.0	80.0	60.3	80.0	80.0	80.0
	42	80.0	80.0	80.0	80.0	51.7	80.0	80.0	80.0
	48	80.0	80.0	80.0	79.9	45.3	80.0	80.0	80.0
48	24	80.0	80.0	80.0	80.0	79.2	80.0	80.0	80.0
	30	80.0	80.0	80.0	80.0	63.4	80.0	80.0	80.0
	36	80.0	80.0	80.0	80.0	52.8	80.0	80.0	80.0
	42	80.0	80.0	80.0	79.9	45.3	80.0	80.0	80.0
	48	80.0	80.0	80.0	69.9	39.6	80.0	80.0	80.0
54	24	80.0	80.0	80.0	80.0	70.4	80.0	80.0	80.0
	30	80.0	80.0	80.0	80.0	56.3	80.0	80.0	80.0
	36	80.0	80.0	80.0	80.0	46.9	80.0	80.0	80.0
	42	80.0	80.0	80.0	71.0	40.2	80.0	80.0	80.0
	48	80.0	80.0	80.0	62.1	35.2	80.0	72.9	80.0
60	24	80.0	80.0	80.0	80.0	63.4	80.0	80.0	80.0
	30	80.0	80.0	80.0	80.0	50.7	80.0	80.0	80.0
	36	80.0	80.0	80.0	74.6	42.2	80.0	80.0	80.0
	42	77.5	80.0	80.0	62.4	35.4	80.0	73.2	80.0
	48	69.4	80.0	80.0	55.9	31.7	88.4	65.6	80.0
66	24	80.0	80.0	80.0	80.0	57.6	80.0	80.0	80.0
	30	80.0	80.0	80.0	80.0	46.1	80.0	80.0	80.0
	36	78.5	80.0	80.0	67.8	38.4	80.0	79.5	80.0
	42	67.3	80.0	80.0	58.1	32.9	80.0	68.2	80.0
	48	58.9	80.0	80.0	50.8	28.8	80.4	59.6	80.0
72	24	80.0	80.0	80.0	80.0	52.8	80.0	80.0	80.0
	30	80.0	80.0	80.0	74.6	42.2	80.0	80.0	80.0
	36	67.4	80.0	80.0	62.1	35.2	80.0	72.9	80.0
	42	57.8	80.0	80.0	53.3	30.2	80.0	62.5	80.0
	48	50.6	80.0	80.0	46.6	26.4	73.7	54.7	80.0
78	24	80.0	80.0	80.0	80.0	48.7	80.0	80.0	80.0
	30	70.2	80.0	80.0	68.8	39.0	80.0	80.0	80.0
	36	58.5	80.0	80.0	57.4	32.5	80.0	67.3	80.0
	42	50.2	80.0	80.0	49.2	27.9	77.7	57.7	80.0
	48	43.9	70.9	80.0	43.0	24.4	68.0	50.5	75.8
84	24	77.0	80.0	80.0	79.9	45.3	80.0	80.0	80.0
	30	61.6	80.0	80.0	63.9	36.2	80.0	75.0	80.0
	36	51.3	80.0	80.0	53.3	30.2	80.0	62.5	80.0
	42	44.0	71.0	80.0	45.6	25.9	72.2	53.6	80.0
	48	38.5	62.1	80.0	39.9	22.6	63.1	46.9	70.4


PRESSURE LOAD TABLE FOR STORM BARS & BAR END CONNECTIONS									
SHUTTER WIDTH (IN)	HEIGHT OR BAR SPACING (IN)	ALLOWABLE PRESSURE (PSF) AS CONTROLLED BY BARS			ALLOWABLE PRESSURE (PSF) AS CONTROLLED BY BAR END CONNECTIONS				
		3" BAR	4" BAR	5" BAR	CONN "A" & "B"		CONN "C"		CONN "D"
					WOOD	BLOCK/CONC	WOOD	BLOCK/CONC	BLOCK/CONC
90	24	53.4	80.0	80.0	74.6	42.2	80.0	80.0	80.0
	30	42.7	80.0	80.0	59.6	33.8	80.0	70.0	80.0
	36	35.6	73.2	80.0	49.7	28.2	78.6	58.3	80.0
	42	30.5	62.7	80.0	42.6	24.1	67.4	50.0	75.1
	48	26.7	54.9	77.2	37.3	21.1	58.9	43.7	65.7
96	24	42.3	80.0	80.0	69.9	39.6	80.0	80.0	80.0
	30	33.8	71.2	80.0	55.9	31.7	80.0	65.6	80.0
	36	28.2	59.4	80.0	46.6	26.4	73.7	54.7	80.0
	42	24.1	50.9	78.6	39.9	22.6	63.1	46.9	70.4
	48	21.1	44.5	68.7	35.0	19.8	55.3	41.0	61.6
102	24	—	71.4	80.0	65.8	37.3	80.0	77.2	80.0
	30	—	57.1	80.0	52.6	29.8	80.0	61.7	80.0
	36	—	47.6	80.0	43.9	24.8	69.3	51.5	77.3
	42	—	40.8	70.4	37.6	21.3	59.4	44.1	66.3
	48	—	35.7	61.6	32.9	18.6	52.0	38.6	58.0
108	24	—	58.0	80.0	62.1	35.2	80.0	72.9	80.0
	30	—	46.4	80.0	49.7	28.2	78.6	58.3	80.0
	36	—	38.7	68.2	41.4	23.5	65.5	48.6	73.0
	42	—	33.1	58.4	35.5	20.1	56.1	41.7	62.6
	48	—	29.0	51.1	31.1	17.6	49.1	36.4	54.8
112	24	—	50.7	80.0	59.9	33.9	80.0	70.3	80.0
	30	—	40.6	71.6	47.9	27.2	75.8	56.2	80.0
	36	—	33.8	59.7	39.9	22.6	63.1	46.9	70.4
	42	—	29.0	51.1	34.2	19.4	54.1	40.2	60.3
	48	—	25.4	44.7	30.0	17.0	47.4	35.1	52.8

1. ALL PRESSURES ARE FOR BOTH POSITIVE & NEGATIVE AND ARE PSF.
2. REF. SHEET 7 FOR CONNECTION TYPES & DETAILS.

LOAD TABLE INSTRUCTIONS:

1. SELECT AN OVERALL SHUTTER SIZE (TOTAL WIDTH & HEIGHT).
2. DETERMINE THE REQUIRED DESIGN WIND PRESSURE FOR THE SHUTTER.
3. IF THE SHUTTER HEIGHT IS LESS THAN OR EQUAL TO 76", GO TO "PRESSURE TABLE FOR SINGLE SPAN SHUTTERS" ON SHEET 9 AND COMPARE THE REQUIRED DESIGN PRESSURE TO THE ALLOWABLE PRESSURES IN THE TABLE. IF ALLOWABLE PRESSURE IS EQUAL TO OR GREATER THAN THAT REQUIRED, NO BAR IS REQUIRED & YOU ARE FINISHED. IF ALLOWABLE PRESSURE IS LESS THAN REQUIRED, STORM BAR(S) ARE NEEDED, SO CONTINUE TO NUMBER 4 BELOW.
4. IF BARS ARE REQUIRED, GO TO LOAD TABLES ON THIS SHEET.
5. GO TO APPLICABLE SHUTTER WIDTH IN TABLE AND CHOOSE THE DESIRED BAR SPACING.
6. GO ACROSS THE TABLE AND CHOOSE THE BAR AND CONNECTION WHO'S ALLOWABLE PRESSURE IS GREATER THAN OR EQUAL TO THE REQUIRED PRESSURE. IF THE DESIRED BAR AND/OR CONNECTION TYPE DOES NOT MEET THE REQUIRED SHUTTER DESIGN PRESSURE, CHOOSE ANOTHER BAR SPACING AND CHECK THE BAR TYPE & CONNECTION AGAIN. REPEAT UNTIL DESIRED & CORRECT BAR & CONNECTION TYPE ARE DETERMINED (NOTE THAT THE LESSER PRESSURE OF THE BAR, CONNECTION TYPE, OR MAXIMUM ALLOWABLE OF +/-80 PSF SHALL CONTROL THE SHUTTER).

PRODUCT REVISED
as complying with the Florida
Baking Code
Acceptance No. 06-0831-02
Expiration Date 11/15/2011
By: Helmut A. Meier
Miami Baker Product Control
Division

DRAWING NO. 1018	REV. A	CERTIFICATION  WARREN W. SCHAEFFER, P.E. P.E. NO. 44135	DRAWING TITLE IMPACT BAHAMA SHUTTER (DADE)	CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 8995 N. MILITARY TRAIL, SUITE C-204 PALM BEACH GARDENS, FL 33410 PHONE: 561-775-4902 FAX: 561-775-4903	MANUFACTURER FOLDING SHUTTER CORPORATION 7089 HEMSTREET PLACE WEST PALM BEACH, FLORIDA 33413 561-683-4811	NO. REVISION DESCRIPTION BY DATE	PLOT: 1=1	DRAWN BY: W.W.S.	CHECKED BY: W.W.S.

SHEET NO.

10 OF **10**